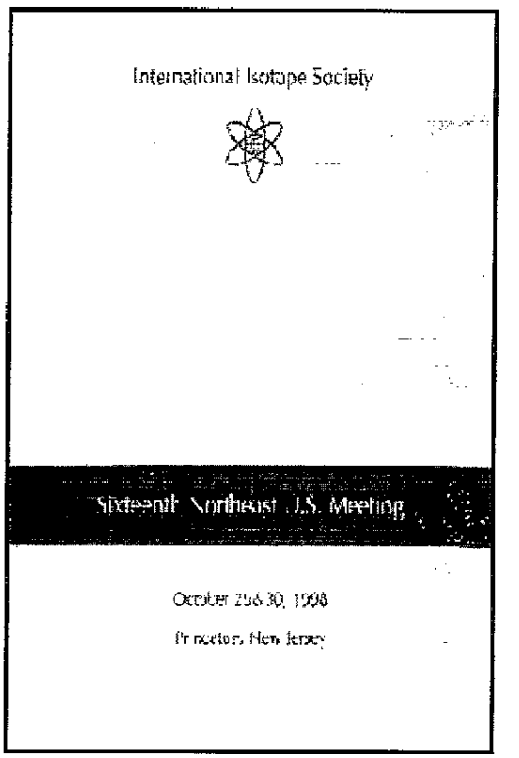
International Isotope Society

Northeast US Chapter Meeting, October 29-30, 1998 in Princeton, New Jersey

..ORAL PRESENTATIONS..POSTER PRESENTATIONS..

ORAL PRESENTATIONS

- Performance of Human Mass Balance Studies with Stable Isotope Labeled Drug and Continuous flow-Isotope Ratio Mass Spectrometry
- Synthesis of High Specific Activity Tritium Labeled Retinoids
- Convenient Generation of ^{14}CO for Carbonylation Reactions
- A Review of Strategies for Radiolabeling Biological Molecules Part II, Oligonucleotides, DNA and RNA
- Current Practices on the Use of Carbon-14 and Tritium Isotopes in Human ADME Studies
- SA Determinations of C-14 Labeled Compounds By NMR Spectroscopy
- Mixed Waste Treatment and Disposal Options
- Development of a New Detector-Cell1 to Measure Low Energy Beta Radiation at High Count Rates in Preparative HPLC with the Berthold Radioflow Monitor



POSTER PRESENTATIONS

- Synthesis of ^{14}C-Temozolomide
- Syntheses of SDZ 249-665 Labelled with ^{14}C in Two Positions
- Ultrasonic H / D Exchange in Carbohydrates: Stereospecificity and Regioselecilvity
- Flow Cell for Radioactivity Detectors: Solid Cell or Liquid Cell?
- Synthesis and Analysis of ^{14}C Labeled CGH 1816A
- A High Yielding Synthesis of [^{14}C]-Dibenzosuberenone Using [14C]-Dimethylformamide
- The Synthesis of the Immunosuppressant [^{14}C]-L733,725
- A Dual BGO HPLC Detector for PET Metabolite Studies
- Synthesis and Characterization of N-Methyl[1-^{14}C]neodecanamide
- Synthesis of 5-Ch1oro-2-nitropheno1 (ring-UL-^{14}C)
- Synthesis of Labeled and Unlabeled Acyl Glucuronides

Performance of Human Mass Balance Studies with Stable Isotope Labeled Drug and Continuous flow-Isotope Ratio Mass Spectrometry

Thomas R. Browne, MD.,[1] George K Szabo, MPH,; Alfred Ajami, Ph.D.,[2]

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Source: https://www.industrydocuments.ucsf.edu/docs/qlbj0001

[1]Departments of Neurology and Pharmacology, Boston University School of Medicine;
Neurology Service, Boston Department of Veterans Affairs Medical Center
[2]Mass Trace, Woburn, MA.

We propose performing human mass balance studies by administering stable isotope labeled (^{13}C or ^{15}N) drug and quantitating excess (above background) ^{13}C or ^{15}N in urine, serum and feces by continuous flowisotope ratio mass spectrometry (CF-IRMS). Theoretical calculations and empirical data (dynamic range, linearity, sensitivity, precision, and accuracy) are presented to establish that commercially available CFARMS instruments can quantitate stable isotope labeled (one or two ^{15}N or ^{13}C labels) drug concentrations of 1.0 ug/ml or greater in urine, serum (^{15}N), or feces. More than two ^{13}C labels may be necessary to quantitate 1.0 pg/ml of drug in serum. Three human volunteers received 650 mg of [redacted]-acetaminophen, and urine was collected for 72 hours. Label recovered in urine (% administered dose) was 97.4, 78.9 and 95.4 for ^{13}C and 90.3, 77.0 and 90.6 for ^{15}N. Fecal recovery of label for one subject was 0.9% ($^{13}C2$) and 1.1% (^{15}N). Serum pharmacokinetic values obtained by counting ^{13}C or ^{15}N in one subject were as expected for acetaminophen. The method appears promising. Further validation of the method is ongoing.

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